

24 Apr 1991

V06NP-B

VOLTMETER, FREQUENCY SELECTIVE

**1. GENERAL.** This procurement requires a frequency selective voltmeter for telecommunications measurements.

**2. CLASSIFICATION.** Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

**3. OPERATIONAL REQUIREMENTS.** The equipment shall be capable of performing spectral analysis within the specifications identified below.

**3.1 Frequency specifications.**

**3.1.1 Frequency range.** 15 Hz to 50 kHz.

**3.1.2 Frequency display resolution.** 1 Hz or less.

**3.1.3 Frequency accuracy.**  $\pm 3.5$  Hz.

**3.1.4 Stability.** The frequency stability shall be within  $\pm 10$  Hz per hour after a warm-up time of not more than one hour.

**3.1.5 Automatic frequency control.** The equipment shall be provided with automatic frequency control. Hold-in range shall be at least  $\pm 800$  Hz. An indication of an unlocked condition shall be provided.

**3.2 Amplitude specifications.**

**3.2.1 Amplitude range.** 100 nV to 30 Vrms.

**3.2.2 Amplitude display.** Digital or mirror-backed analog meter.

**3.2.3 Amplitude accuracy.** Log:  $\pm 2$  dB, Linear:  $\pm 4\%$ .

**3.2.4 Dynamic range.** 80 dB minimum.

**3.2.5 Noise sidebands.** 70 dB down 10 bandwidths away from the CW input signal.

**3.2.6 Calibrator.** An internal calibrator capable of verifying the amplitude accuracy to at least  $\pm 1.5\%$  shall be provided.

**3.3 Sweep specifications.**

**3.3.1 Resolution bandwidth.** Selectable from 3 Hz to 300 Hz.

**3.3.2 Scan width.** Selectable from 50 Hz to 50 kHz.

**3.3.3 Sweep time.** Selectable from 0.1s to 2,000s.

**3.3.4 Sweep modes.** Repetitive, single scan, manual.

**3.3.5 Sweep error light.** A sweep error light shall be provided which indicates that a sweep rate is too

fast to capture the full response.

### **3.4 Input specifications.**

**3.4.1 Unbalanced input RC.** 1 megohm or greater shunted by 40 pF or less.

**3.4.2 Balanced bridged impedance.** 10 kilohms nominal.

**3.4.3 Balanced terminated impedance.** Selectable between 600 ohms or 900 ohms nominal.

#### **3.4.4 Maximum input.**

a.  $\pm 100$  Vdc or Vrms on the 0.2V and higher ranges.

b.  $\pm 50$  Vdc or Vrms on the 0.1V and lower ranges.

**3.4.5 Input connector.** The equipment input connector shall mate with a WECO 310 plug.

**3.5 Outputs.** Tracking generator and X-Y recorder with pen lift control outputs shall be provided.

## **4. GENERAL REQUIREMENTS.**

**4.1 Power source.** MIL-T-28800 nominal power source requirements are invoked. Operation at 400 Hz is not required. Maximum power consumption: 12W.

**4.2 Weight.** 20 kg (44 lb) maximum.

**4.3 Lithium batteries.** Per MIL-T-28800, lithium batteries are prohibited without prior authorization. A request for approval for the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.